

Docket No. 113669-5178A
US App. No. 10/720,143

IN THE CLAIMS

1-27. (previously canceled)

28. (previously presented) A surgical arm system, comprising:
a mounting component for mounting the surgical arm system to an object;
a holding component for holding a retaining element that is sized and shaped to retain a portion of a predetermined surgical instrument therin and wherein the retaining element includes an opening defined therein, wherein the opening is sized to accommodate a proximal end of the surgical instrument and at least one retention guard disposed within the retaining element, wherein each of the at least one retention guard is in contact with the surgical instrument while the retaining element is in a first position so as to define a transitional fit between each of the at least one guard and the surgical instrument and wherein the retaining element is transitioning to and from the first position by, respectively, supplying and discontinuing a supply of a pressurized gas to the retaining element;
a plurality of arm segments for connecting the mounting component to the holding component, the plurality of arm segments including first and second components, the first component being connectable to the second component;
a quick connect member attached to one of the first component or second component; and
a quick connect adapter attached to the other one of the first component or the second component and having a stop disk, a ramp and actuator attached thereto, wherein the quick connect member is shaped to be insertable within the quick connect adapter to bring the first component or the second component into communication with the other of the first component or the second component,
wherein such insertion is effective to cause the ramp and the actuator to be at least partially depressed from a first of each of the ramp and actuator positions to a depressed second position, and such that continued insertion of the quick connect member beyond a

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predetermined locus is effective to cause the ramp and actuator to return to their respective first positions to physically block separation of the quick connect member from the quick connect adaptor, and wherein the stop disk is positioned to substantially prevent movement of the quick connect member beyond the predetermined locus

29. (currently amended) The surgical arm system of claim [1] 28, wherein actuation of the actuator is effective to place the actuator and the ramp in their respective second positions to allow for removal of the quick connect member from the quick connect adapter via the application of a predetermined force upon at least a portion of the quick connect member.

30. (currently amended) The surgical arm system of claim [1] 28, wherein lateral movement of the actuator is effective to place the actuator and the ramp in their respective second positions to allow for the removal of the quick connect member from the quick connect adaptor.

31. (currently amended) The surgical arm system of claim [1] 28, wherein the mounting component is a mounting element that includes first and second mounting jaws between which the object is retained.

32. (currently amended) The surgical arm system of claim [1] 31, further comprising: a knob in communication with the jaws, wherein movement of the knob in a first direction is effective to move the mounting jaws closer together and wherein movement of the knob in a second direction is effective to move the jaws further apart.

33. (currently amended) The surgical arm system of claim [1] 28, wherein the surgical instrument is a retractor that is reasonably held by the holding component.

34. (currently amended) The surgical arm system of claim [1] 28, wherein the quick connect member includes an enlarged region that, following insertion of the quick

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connect member beyond the predetermined locus, is located generally adjacent to the ramp on the quick connect adaptor.

35. (currently amended) The surgical arm system of claim [1] 34, wherein the enlarged region on the quick connect member is substantially bell-shaped.

36. (currently amended) The surgical arm system of claim [1] 34, wherein the quick connect member includes a recessed region generally adjacent to the enlarged region.

37. (currently amended) The surgical arm system of claim [1] 36, wherein the ramp on the quick connect adaptor is positioned within the recessed region of the quick connect member upon returning to its [at] first position following insertion of the quick connect member beyond the predetermined locus.

38. (currently amended) The surgical arm system of claim [1] 28, wherein the holding component further comprises: a retaining element insertable within the holding element, the retaining element including a plurality of protrusions, wherein a pin extends between two of the plurality of protrusions, wherein a predetermined degree of rotation of the retaining element is effective to insert the protrusions into seats defined within the holding element such that the pin is placed into contact with the retaining element.

39. (currently amended) The [holding component of a] surgical arm system of claim [28] 38, wherein the predetermined degree of rotation is about 90°.

40. (currently amended) A surgical arm system, comprising:
a mounting component on a first end of the surgical arm system;
a holding component on a second end of the surgical arm system for holding a surgical instrument therein;
a plurality of arm segments for connecting the mounting component to the holding component wherein a first arm segment includes a quick connect member

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thereon and a second arm segment includes a quick connect adaptor thereon and wherein the first and second arm segments are configured to allow a gas to pass therethrough when the quick connect adaptor and quick connect member are interconnected;

the holding component including a ball having an opening defined therein, wherein the opening is sized to accommodate a portion of a surgical instrument therein, the ball having a diameter that is compressible to define engaging contact between the ball and the surgical instrument and wherein the diameter of the ball is movable between first and second positions by supplying and discontinuing a supply of pressurized gas through the first and second arm segments to the ball.

41. (canceled) The surgical arm system of claim 30, wherein the ball is transitionable to and from the first and second positions by, respectively, supplying and discontinuing a supply of a pressurized gas to the ball.

42. (currently amended) The surgical arm system of claim [30] 40, wherein the holding component further comprises: a retention guard insertable within the holding element, wherein the retention guard is movable in response to supplying or discontinuing the supply of a pressurized gas to the holding element.

43. (currently amended) The surgical arm system of claim [30] 40, wherein the holding component further comprises: a retention guard insertable within the holding element, wherein the retention guard is biased to contact the surgical instrument in a first position of the retention guard.

44. (currently amended) The surgical arm system of claim [30] 40, wherein the holding component further comprises: a retention guard insertable within the holding element, wherein the retention guard is biased to engage the surgical instrument in a second position of the retention guard.

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45. (currently amended) The surgical arm system of claim [30] 40, wherein the holding component has a predetermined degree of rotation of up to about 90°.

46. (currently amended) A surgical arm system, comprising:
a quick connect system for bringing into communication a first component of a surgical arm system with a second component of the surgical arm system
a quick connect member attached to a first component; and
a quick connect adapter attached to a second component; and having an actuator attached thereto, wherein the quick connect member is shaped to be insertable into the quick connect adapter to bring the first component into communication with the second component and to allow a gas to flow therethrough,
a holding component on one of the first or second components of the surgical arm system for holding a retaining element that is sized and shaped to retain a portion of a predetermined surgical instrument therein and wherein the retaining element includes an opening defined therein, wherein the opening is sized to accommodate a portion of the surgical instrument therein and at least one retention guard disposed within the retaining element, wherein each of the at least one retention guard is in contact with the surgical instrument while the retaining element is in a first position so as to define a transitional fit between each of the at least one retention guard and the surgical instrument and wherein the retaining [element. is transitionable to and from the first position by, respectively, supplying and discontinuing a supply of a pressurized gas to the retaining element]
element comprises a ball shaped member wherein the diameter of the ball shaped member is movable between first and second positions by supplying and discontinuing a supply of pressurized gas to the ball shaped member.

47. (currently amended) The surgical arm system of claim [36] 46, wherein actuation of the actuator is effective to place the actuator in a first position to allow for removal of the quick connect member from the quick connect adapter via the application of a predetermined force upon the actuator of the quick connect member.

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48. (currently amended) The surgical arm system of claim [36] 47, wherein release of the actuator is effective to allow the actuator to return to a second position wherein the quick connect member and the quick connect adapter are interconnected to allow for the supply of a pressurized gas to the retaining element.

49. (canceled) The surgical arm system of claim 36, wherein the retaining element is a ball shaped member that is transitionable to and from the first and second positions by, respectively, supplying and discontinuing a supply of a pressurized gas to the ball.

50. (currently amended) The surgical arm system of claim [36] 46, wherein the holding component further comprises: a retention guard insertable within the holding element, wherein the retention guard is movable in response to supplying or discontinuing the supply of a pressurized gas to the holding element.

51. (currently amended) The surgical arm system of claim [36] 46, wherein the holding component further comprises: a retention guard insertable within the holding element, wherein the retention guard is biased to contact the surgical instrument in a first position of the retention guard.

52. (currently amended) The surgical arm system of claim [36] 46, wherein the holding component further comprises: a retention guard insertable within the holding element, wherein the retention guard is biased to engage the surgical instrument in a second position of the retention guard.

53. (currently amended) A surgical arm system, comprising:
a quick connect system for bringing into communication a first component of a surgical arm system with a second component of the surgical arm system;
a quick connect member attached to a first component and including a substantially bell-shaped and an adjacent recessed region;

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a quick connect adapter attached to a second component; and having an actuator attached thereto, wherein the quick connect member is shaped to be insertable into the quick connect adapter to bring the first component into communication with the second component to allow the supply of a gas therethrough;

wherein such insertion is effective to cause the movement of the actuator from a the first position thereof, and such that continued insertion of the quick connect member beyond a predetermined locus is effective to cause the actuator to return to the first position and to physically block separation of the quick connect member from the quick connect adaptor;

a holding component on one of the first or second components of the surgical arm system for holding a retaining element that is sized and shaped to retain a portion of a predetermined surgical instrument therein and wherein the retaining element includes an opening defined therein, wherein the opening is sized to accommodate a portion of the surgical instrument therein and at least one retention guard disposed within the retaining element, wherein the retaining element [is a ball shaped member that is transitionable to and from the first and second positions by, respectively, supplying and discontinuing a supply of a pressurized gas to the ball] comprises a ball shaped member wherein the diameter of the ball shaped member is movable between first and second positions by supplying and discontinuing a supply of pressurized gas to the ball shaped member.